

Notice of Allowability	Application No.	Applicant(s)	
	10/540,444	GUITTET ET AL.	
	Examiner	Art Unit	
	ANTHONY MACKOWEY	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment filed June 18, 2009.
2. ☒ The allowed claim(s) is/are 3,9,12,18,21 and 27.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|---|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date <u>9/16/09</u> . |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

/Brian P. Werner/
Supervisory Patent Examiner, Art Unit 2624

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Blair Hughes (Reg. No. 32,901) on September 17, 2009.

The application has been amended as follows:

- Cancel claims 1, 2, 4, 5, 6, 7, 8, 10, 11, 13, 14, 15, 16, 17, 19, 20, 22, 23, 24, 25 and 26.
- Claim 3, lines 4 and 7, replace "determining" with --obtaining--.
- Claim 12, lines 9 and 12, replace "determine" with --obtain--.
- Claim 21, lines 7 and 10, replace "determining" with --obtaining--.
- Amend claim 9 in its entirety to recite as follows:

An automated method of scoring Oestrogen and Progesterone Receptors expression (ER and PR) for image data obtained from histological slides, the method including using computer apparatus to carry out the steps of:

a) remapping pixel intensities in the image data to increase the contrast of relatively darker image regions and to transform relatively brighter image regions into a contrast-free background,

- b) converting the remapped image data into image data corresponding to thresholded images in which total blob area and brown blob area respectively are distinguished from other image regions,*
 - c) expressing brown blob area as a proportion of total blob area to provide a first contribution to a score,*
 - d) providing a second contribution to the score by obtaining the number of relatively dark image pixels compared to relatively bright image pixels and deriving the second contribution in accordance with the magnitude of the number of relatively dark pixels,*
 - e) deriving the score on the basis of the first and second contributions collectively,*
 - f) obtaining a hue for the image data and deriving a correction for the score indicated by the first and second contributions if the hue indicates a degree of blueness or brownness which renders such correction appropriate, and*
 - g) providing the score for input to a diagnostic report.*
- Amend claim 18 in its entirety to recite as follows:
 - A system for computer-implemented scoring of Oestrogen and Progesterone Receptors expression (ER and PR) from image data obtained from histological slides, the system incorporating a microscope and a camera for photographing a histopathological specimen and arranged to provide digitised colour image data, and computer apparatus*

for receiving the digitised colour image data, the computer apparatus incorporating a computer program stored in a memory and being programmed by such computer program to:

a) remap pixel intensities in the image data to increase the contrast of relatively dark image regions and to transform relatively bright image regions into a contrast-free background,

b) convert the remapped image data into image data corresponding to thresholded binary images in which total blob area and brown blob area respectively are distinguished from other image regions,

c) express brown blob area as a proportion of total blob area to provide a first contribution to a score,

d) provide a second contribution to the score by obtaining the number of relatively dark image pixels compared to relatively bright image pixels and deriving the second contribution in accordance with the magnitude of the number of relatively dark pixels,

e) derive the score on the basis of the first and second contributions collectively, and

f) obtain a hue for the image data and derive a correction for the score indicated by the first and second contributions if the hue indicates a degree of blueness or brownness which renders such correction appropriate.

- Amend claim 27 in its entirety to recite as follows:

A computer readable hardware medium which embodies computer readable instructions for controlling operation of a computer apparatus to score Oestrogen and Progesterone Receptors expression (ER and PR) from image data obtained from histological slides, the instructions providing for control of the computer apparatus to implement the steps of:

a) remapping pixel intensities in the image data to increase the contrast of relatively dark image regions and to transform relatively bright image regions into a contrast-free background,

b) converting the remapped image data into image data corresponding to thresholded images in which total blob area and brown blob area respectively are distinguished from other image regions,

c) expressing brown blob area as a proportion of total blob area to provide a first contribution to a score,

d) providing a second contribution to the score by obtaining the number of relatively dark image pixels compared to relatively bright image pixels and deriving the second contribution in accordance with the magnitude of the number of relatively dark pixels,

e) deriving the score on the basis of the first and second contributions collectively, and

f) obtaining a hue for the image data and deriving a correction for the score indicated by the first and second contributions if the hue

indicates a degree of blueness or brownness which renders such correction appropriate.

Reasons for Allowance

Claims 3, 12 and 21 require obtaining pixel number thresholds to quantify scoring, comparing the number of relatively dark pixels with the pixel number thresholds and scoring ER or PR score in accordance therewith.

Claims 9, 18 and 27 require obtaining a hue for the image data and obtaining a correction for the score indicated by the first and second contributions if the hue indicates a degree of blueness or brownness which renders such correction appropriate.

The above features, as explicitly recited in the claims, is neither disclosed nor suggested by the closest prior art of record.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANTHONY MACKOWEY whose telephone number is (571)272-7425. The examiner can normally be reached on M-F 9:00-6:00.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Werner can be reached on (571)272-7401. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AM
9/17/09

/Brian P. Werner/
Supervisory Patent Examiner, Art Unit 2624